

### Remarks

Favorable reconsideration of this application is requested in view of the following remarks. For the reasons set forth below, Applicant respectfully submits that the claimed invention is allowable over the cited references.

Per the Office Action dated July 28, 2003, Applicant appreciates the allowance of claim 32 and the indication of allowability for claims 8-10, 17, 23, 24, 27 and 30. Accordingly, claims 8-10, 17, 23, 24 and 27 have been amended to include all of the limitations of their respective underlying claims. Because remaining claim 30 depends from claim 27, each of these claims is now believed to be in condition for allowance and Applicant requests that the objection be removed.

The Office Action also indicated the following rejections: claims 1, 6, 11, 15, 20, 22 and 25 are rejected under 35 U.S.C. § 102(b) over *Szechenyi* (U.S. Patent No. 5,271,037); claims 33 and 34 are rejected under 35 U.S.C. § 102(e) over *Terry* (U.S. Patent No. 6,055,297); claims 36 and 37 are rejected under 35 U.S.C. § 102(e) over *Bremer* (U.S. Patent No. 6,160,790); claims 2, 7, 16 and 26 are rejected under 35 U.S.C. § 103(a) over the *Szechenyi* '037 reference in view of *Sands* (U.S. Patent No. 6,134,283); claims 3, 18 and 28 are rejected under 35 U.S.C. § 103(a) over the *Szechenyi* '037 reference in view of the *Sands* '283 reference and further in view of *Pfeil et al.* (U.S. Patent No. 6,160,511); claims 4, 19 and 29 are rejected under 35 U.S.C. § 103(a) over the *Szechenyi* '037 reference in view of *Gutlin* (U.S. Patent No. 4,995,104); claim 5 is rejected under 35 U.S.C. § 103(a) over the *Szechenyi* '037 reference in view of the *Gutlin* '104 reference and further in view of the *Sands* '283 reference; claims 11-13 are rejected under 35 U.S.C. § 103(a) over the *Szechenyi* '037 reference; claims 14, 21 and 31 are rejected under 35 U.S.C. § 103(a) over the *Szechenyi* '037 reference in view of *Terry*; and claim 35 is rejected under 35 U.S.C. § 103(a) over *Terry* in view of *Szechenyi*.

With respect to the Section 102(b) rejection of claims 1, 6, 11, 15, 20, 22 and 25, each of claims 1, 15 and 25 has been amended. Applicant respectfully submits that the teaching of the *Szechenyi* '037 reference fails to correspond to the claimed invention. For example, each of Applicant's claims 1, 15 and 25 is directed to, among other distinguishable aspects, identifying crosstalk in a received signal including, for example, identifying a crosstalk function corresponding to the crosstalk data at a location remote

from the receiver. Moreover, the system of claim 15 has the global information about the crosstalk between pairs of transmitting mediums. This information can be used for provisioning, spectral management, and many other applications to improve the overall system's performance. The cited teaching in the *Szechenyi* '037 reference concerns operation that occurs entirely at a receiver and, therefore, at the receiver location. Accordingly, the subject Section 102(b) rejection should be withdrawn.

With respect to the rejection of claims 33 and 34 under 35 U.S.C. § 102(e) over the *Terry* '297 reference, Applicant has amended and therefore respectfully traverses because the teaching of the *Terry* '297 reference fails to correspond to the claimed invention. For example, each of Applicant's claims 33 and 34 concerns, among other distinguishable aspects, identifying crosstalk functions and characteristics in the DSL system as a function of a differential between known transmitted data and a combined signal, the combined signal including the known transmitted data and crosstalk noise. The cited teaching in the *Terry* '297 reference concerns PSD determination based on a different set of criteria. Accordingly, the subject Section 102(e) rejection of claims 33 and 34 over the *Terry* '297 reference should be withdrawn.

With respect to the rejection of claims 36-37 under 35 U.S.C. § 102(c) over *Bremer* (U.S. Patent No. 6,160,790), these claims have been canceled. Applicant therefore respectfully requests that this rejection be withdrawn.

Turning now to the Section 103(a) rejections, for limitations common or incorporated via claim dependency, Applicant traverses each such rejection and submits that Applicant's previously-discussed rationale also applies to these Section 103(a) rejections. Further, for the reasons discussed below, Applicant submits that each of the Section 103(a) rejections is improper for failing to provide evidence in the record (*e.g.*, prior art) that would support the conclusion that the skilled artisan would be lead to combine the cited teachings as asserted in the Office Action. According to long-standing law, the alleged motivation for combining the references is to be suggested by the *references* themselves not by unsupported conclusions drawn after review of the Applicant's invention. *See e.g., Ruiz v. A.B. Chance Co.*, 234 F.3 654 (December 6, 2000) ("Our court has provided [that the] motivation to combine may be found explicitly or implicitly: 1) in the *prior art references* themselves; 2) in the knowledge of those of

ordinary skill in the art that certain *references*, or disclosures in those references, are of special interest or importance in the field; or 3) from the nature of the problem to be solved, 'leading inventors to look to *references* relating to possible solutions to that problem.'"). Not only does the record fail to include evidence that would support the Office Action's conclusions for the combined teachings, but Applicant respectfully submits that the record evidences that the skilled artisan would not be motivated to combine the teachings as asserted in the Office Action. This evidence may be found in the cited prior art, as discussed below.

Applicant also traverses the prior art rejections of claims 2, 4, 26, and 31. Each of claims 2, 26, and 31 has been rewritten in independent form to include all limitations of their respective underlying claims. Applicant introduces new independent claim 40 as corresponding to original claim 4. The rationale in support of Applicant's traversal in this particular regard is discussed below.

More specifically, Applicant traverses the Section 103(a) rejections of: claims 2, 7, 16 and 26 over the *Szechenyi* '037 reference in view of the *Sands* '283 reference, claims 3, 18 and 28 over the *Szechenyi* '037 reference in view of the *Sands* '283 reference and further in view of the *Pfeil* '511 reference, claims 4, 19 and 29 over the *Szechenyi* '037 reference in view of the *Gitlin* '104 reference; claim 5 over the *Szechenyi* '037 reference in view of the *Gitlin* '104 reference and further in view of the *Sands* '283 reference, claims 11-13 over the *Szechenyi* '037 reference, and claims 14, 21 and 31 over the *Szechenyi* '037 reference in view of the *Terry* '297 reference. Each of these rejections relies on citations in the *Szechenyi* '037 reference as asserted against underlying claims 1, 15 or 25. As previously explained, these citations do not correspond to limitations present in underlying claims 1, 15 or 25. Applicant therefore respectfully traverses because the teaching of these references (taken alone or in combination) fails to correspond to the claimed invention.

Applicant also traverses these listed Section 103(a) rejections because each such rejection is based either on an erroneous understanding of the references and/or on an unmotivated modification to the cited teaching in the *Szechenyi* '037 reference that would require the receiver of the *Szechenyi* '037 reference to be redesigned entirely.

Applicant respectfully submits that each of the Section 103(a) rejections over the *Szechenyi* '037 reference in view of the *Gitlin* '104 reference is flawed. These rejections

understanding of the *Sands* '283 reference. These rejections rely on an argument that the *Sands* '283 reference teaches at column 6, lines 23-25, the claim limitations concerning a particular time offset. The Office Action fails to consider that the claimed time offset is between parameters not discussed in the *Sands* '283 reference at column 6, lines 23-25. Rather, at column 6, lines 23-25, the *Sands* '283 reference teaches a timing offset in consecutive frames of a received signal for a TDM system. Moreover, to combine these teachings would change the design and algorithm of the *Szechenyi* '037 receiver (E1) to accommodate the timing offset in consecutive frames of a received signal for a TDM system. Applicant respectfully submits that this modification would also be illogical, unmotivated, and undermine the intent, purpose and operation of the *Szechenyi* '037 receiver (E1). As such, the rejection cannot be maintained because these cited references teach away from this combination of teachings. See MPEP §2143.01, and *In re Gordon* (A §103 rejection cannot be maintained when the asserted modification undermines the implementation or purpose of the main reference.). Accordingly, each of the Section 103(a) rejections of claims 2-3, 5, 7, 16, 18, 26, 28 and 29 should be removed.

Applicant respectfully traverses the rejection of claims 14, 21 and 31 over the *Szechenyi* '037 reference in view of the *Terry* '297 reference because the asserted prior art, as combined per the argument presented in the Office Action, does not correspond to the claimed invention. The *Szechenyi* '037 reference does not teach system-level spectral management in any regard. The Office Action citation to column 1, lines 14-17 of the *Szechenyi* '037 reference does not, as implied in the Office Action, refer to system-wide crosstalk management. Rather, the *Szechenyi* '037 reference is directed to implementation at a receiver used in a system, with the receiver performing certain tasks at its location to mitigate crosstalk, and the citation to column 1, lines 14-17 of the *Szechenyi* '037 reference refers to general background information concerning crosstalk occurring in a communication path between a transmitting modem and a receiving modem "for one subscriber." With respect to "well-known" DSL systems as combined with the teaching of the *Szechenyi* '037 reference, at best, such a combination would result in a DSL system for which crosstalk would be handled autonomously at individual receivers throughout the DSL system as taught by the *Szechenyi* '037 reference. By further overlying the spectral management services of the *Terry* '297 reference, without further modifying the DSL

system to pass the crosstalk information processed by each of the *Szechenyi* '037 receivers, this combined teaching of the prior art would result in a DSL system with a spectral management block that does not have the necessary *Szechenyi* '037 crosstalk information needed to perform the spectral management services. Moreover, if the DSL system were further modified (not presently asserted in the Office Action), to pass the crosstalk information processed by each of the *Szechenyi* '037 receivers, the overlying spectral management services of the *Terry* '297 reference would render a DSL system that would somehow attempt to provide a crosstalk spectral management function based on the knowledge that the crosstalk interference is already being addressed at each of the *Szechenyi* '037 receivers, and there would be no need for the spectral management services of the *Terry* '297 reference. In either instance, the rationale used to support the rejection fails to correspond to the claimed invention and fails to be accompanied by evidence of record that the skilled artisan would be motivated to implement such a unique set of unrelated system components.

With particular respect to the limitations of claims 21 and 31, Applicant further submits that the prior art does not suggest locating the data processing circuitry of the *Szechenyi* '037 receiver (E1 of Figure 1) at a location remote from the *Szechenyi* '037 receiver per Applicant's claim 21 or 31, and that the asserted teachings behind this rejection would completely undermine the implementations provided for each of the *Szechenyi* '037 embodiments and, therefore, would undermine the alleged invention of the *Szechenyi* '037 reference. As such, the rejection cannot be maintained because the prior art teaches away from such a combination of teachings. See MPEP §2143.01, and *In re Gordon* (A §103 rejection cannot be maintained when the asserted modification undermines the implementation or purpose of the main reference.). The rejections of claims 21 and 31 should therefore be removed.

Applicant similarly traverses the Section 103(a) rejections of claim 11 concerning the provisioning of lines in which the identified crosstalk function is identified and of claims 12 and 13, concerning DSL system diagnosis or maintenance services for a DSL system in which the identified crosstalk function is identified. The asserted prior art, as combined per the argument presented in the Office Action, does not correspond to the claimed invention. The *Szechenyi* '037 reference does not teach system-level spectral

management in any regard. The Office Action citation to column 1, lines 14-17 of the *Szechenyi* '037 reference does not, as implied in the Office Action, refer to system-wide crosstalk management. Rather, the *Szechenyi* '037 reference is directed to implementation at a receiver used in a system, with the receiver performing certain tasks at its location to mitigate crosstalk, and the citation to column 1, lines 14-17 of the *Szechenyi* '037 reference refers to general background information concerning crosstalk occurring in a communication path between a transmitting modem and a receiving modem "for one subscriber." With respect to "well-known" DSL systems as combined with the teaching of the *Szechenyi* '037 reference, such a combination would result in a DSL system for which crosstalk would be handled autonomously by individual receivers throughout the DSL system as taught by the *Szechenyi* '037 reference. The cited prior art does not suggest a reason to further modify the DSL system to pass the crosstalk information processed by each *Szechenyi* '037 receiver for performing DSL system services such as system-level diagnosis or maintenance services, as claimed. Consequently, this combined teaching of the prior art would result in a DSL system that does not have the necessary *Szechenyi* '037 crosstalk information needed to perform the spectral management services; therefore, the rationale used to support the rejection fails to correspond to the claimed invention and fails to be accompanied by evidence of record that the skilled artisan would be so motivated to implement such a unique set of unrelated system components.

With respect to the Section 103(a) rejection of claim 35 over the *Terry* '297 reference in view of the *Szechenyi* '037 reference, Applicant traverses because this rejection relies on citations used in rejecting claims 33 and 34 under 35 U.S.C. § 102(e), and Applicant has previously explained that these citations do not correspond to limitations present in underlying claim 33. Applicant therefore respectfully traverses because the teaching of these references (taken alone or in combination) fails to correspond to the claimed invention.

With respect to new claims 38 and 39, these claims are directed to determining an interference signal as a function of a differential between known transmitted data and a combined signal, the combined signal including the first signal and crosstalk noise, and also to identifying a crosstalk function based on the known transmitted data and the

interference signal. Consistent with the reasons for allowability as provided in the Office Action, Applicant believes that these limitations are not present in the cited references.

In view of the remarks above, Applicant believes that each of the rejections has been overcome and the application is in condition for allowance. Should there be any remaining issues that could be readily addressed over the telephone, the Examiner is encouraged to contact the undersigned at (651) 686-6633.

Respectfully submitted,

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